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L1	2	"6430527".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:36
L2	. 1	"6430527".pn. and (longest with prefix with match)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:43
L3	1	2 and overall	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:38
L4	0	3 and cascaded	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:09
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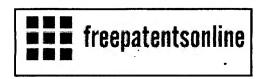
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L10	1	9 and determine .	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:08
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Abstract:

Abstract of EP1544757

Parallel binary searches on lengths using hash tables is described. The parallel search uses more than one search instance. The search instances probe in parallel mutually different contiguous ranges of a search area during each round of searches. After each round, a new search area is defined and one or more search instances are redeployed into the new search area. The search instance for a range of shorter lengths can be redirected to help those of the longer lengths. Due to the help from other search instances, some ranges can be made large without sacrificing the performance. The invention realizes faster address lookups even for longer address lengths.

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This paper appears in: Networking, IEEE/ACM Transactions on

Publication Date: Feb. 1996

Volume: 4, Issue: 1 On page(s): 86 - 97 ISSN: 1063-6692 CODEN: IEANEP

INSPEC Accession Number:5217324 Digital Object Identifier: 10.1109/90.503764 Posted online: 2002-08-06 20:27:02.0

Abstract

This article describes the dynamic prefix tries, a novel data structure with algorithms for insertion, deletion, and retrieval to build an a dynamic database of binary keys of arbitrary length. These tries extend the concepts of compact digital (Patricia) tries to support t storage of prefixes and to guarantee retrieval times at most linear in the length of the input key irrespective of the trie size, even wh searching for longest-matching prefixes. The new design permits very efficient, simple and nonrecursive implementations of small and minimal storage requirements. Insert and delete operations have strictly local effects, and their particular sequence is irrelevant structure of the resulting trie, thus maintaining at all times the desired storage and computational efficiency. The algorithms have be successfully employed in experimental communication systems and products for a variety of networking functions such as address maintenance and verification of access control lists, and high-performance routing tables in operating system kernels

Index Terms

Inspec

Controlled Indexing

access protocols computer networks network operating systems operating system kernels telecommunication network routing tree data structures

Non-controlled Indexing

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Author Keywords

Not Available

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Subjects: Routing and layout

Additional Classification:

G. Mathematics of Computing

G.2 DISCRETE MATHEMATICS

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